

## **Addendum 02 – August 2011 Revision**

### **Smoky Canyon Mine Remedial Investigation/Feasibility Study Sampling and Analysis Plan**

#### **August 2011**

Lower Pole Canyon/Northern Sage Valley Soil and Vegetation Sampling

Additional Sediment Sampling in Lower Pole Canyon

Additional Sediment Sampling in Swale Downgradient from Basin DP-7

Prepared for:

**J.R. Simplot Company**

Smoky Canyon Mine

P.O. Box 912

1130 West Highway 30

Pocatello, ID 83204

Prepared by:



Formation Environmental, LLC

2500 55<sup>th</sup> Street, Suite 200

Boulder, Colorado 80301

## TABLE OF CONTENTS

	<u>Page</u>
<b>TABLE OF CONTENTS.....</b>	<b>i</b>
<b>LIST OF FIGURES.....</b>	<b>ii</b>
<b>1.0 Focused Soil and Vegetation Sampling Plan for Lower Pole Canyon Creek/Northern Sage Valley .....</b>	<b>1</b>
1.1 Overview .....	1
1.2 Sampling Objective .....	1
1.3 Background Information .....	1
1.4 Sampling Plan and Sampling Locations .....	3
1.5 Soil Sampling Equipment and Procedures .....	5
1.6 Vegetation Sampling Equipment and Procedures .....	5
1.7 Soil and Vegetation Analyses .....	6
1.8 Sample Designations and Sample Handling .....	6
<b>2.0 Additional Sediment Sampling in Lower Pole Canyon Below the Pole Canyon ODA Toe.....</b>	<b>7</b>
2.1 Overview .....	7
2.2 Sampling Objective .....	7
2.3 Background Information .....	7
2.4 Sampling and Analysis Plan .....	8
<b>3.0 Additional Sediment Sampling in Swale Downgradient from Detention Basin DP-7 .....</b>	<b>9</b>
3.1 Overview .....	9
3.2 Sampling Objective .....	9
3.3 Background Information .....	9
3.4 Sampling and Analysis Plan .....	9
<b>4.0 References .....</b>	<b>11</b>

## LIST OF FIGURES

<b><u>Figure</u></b>	<b><u>Title</u></b>
1	Soil and Vegetation Selenium Concentrations and Planned Sampling Locations in Lower Pole Canyon Creek and Northern Sage Valley
2	Sampling Locations along Pole Canyon Creek Diversion
3	Proposed Sample Collection of Lower Pole Canyon Sediment in Channel and Overbank Areas
4	Proposed Sample Collection in Swale Downgradient from Detention Basin DP-7

## **1.0 FOCUSED SOIL AND VEGETATION SAMPLING PLAN FOR LOWER POLE CANYON CREEK/NORTHERN SAGE VALLEY**

### **1.1 Overview**

Soil and vegetation sampling is planned for summer 2011 in the LP-1 area and northern Sage Valley along the Pole Canyon Creek drainage pathways. The soil and vegetation samples will be collected once during the summer season, preferably in early to mid August. Actual sampling dates will depend on the schedule for USFS approval of this plan. Sample collection is planned at a total of 18 locations as described below and shown on Figures 1 and 2.

### **1.2 Sampling Objective**

The objective for sampling in the LP-1 area and northern Sage Valley is to characterize selenium concentrations in soil and vegetation in the portions of these areas potentially impacted by surface water flow from the Pole Canyon ODA toe seep during the peak snowmelt runoff period in 2011 (early to mid-June).

Results from the soil and vegetation sampling will be compared with selenium concentration data collected during 2010 Remedial Investigation (RI) sampling. Selenium concentrations in soil are the first line of evidence to answer the question about resultant concentrations in vegetation from the spring 2011 high flows. Although there are various conditions influencing plant uptake of selenium, this process is largely dependent on the selenium concentrations in the soil/growth medium. Therefore, the selenium concentrations in soil samples collected in early August will be compared with concentrations in soil samples collected from northern Sage Valley in the summer of 2010 to identify any changes in concentration that may be related to Pole Canyon Creek flow across Sage Valley in the spring of 2011. If the mean selenium concentrations for soil in the new data are higher, then additional soil and vegetation sampling will be considered.

### **1.3 Background Information**

During the peak of spring runoff in 2011, early to mid-June, Pole Canyon Creek flow on the downstream side of the ODA originated from two discharges – the toe seep (LP-1) which contained high concentrations of selenium, and the pipeline discharge (LP-PD) which contained low concentrations of selenium because the pipeline routes upper Pole Canyon Creek flow around the ODA and, therefore, does not come in contact with seleniferous overburden. Downstream from the ODA toe seep and the pipeline discharge point, the creek flow was either conveyed in the Pole Canyon Creek channel into north Sage Valley or diverted into an irrigation channel flowing in an east-northeast direction (Figure 2), or a combination of both. The selenium concentrations within these channels through northern Sage Valley may have impacted soil and vegetation in areas where inundation/overland flow was observed, particularly

during periods of time when flow from the toe seep comprised a significant portion of flow in Pole Canyon Creek and the Pole Canyon Creek Diversion in north Sage Valley. Further information on spring 2011 flows and potential sources of flow for the toe seep is presented in the draft Hydrologic Evaluation report which was provided to the agencies for review on July 21, 2011. Further evaluations of the spring 2011 flows are underway or will be completed during summer 2011, and will include the timing, duration, and selenium concentration/loading of flows in Pole Canyon Creek and related diversions. These evaluations will include selenium analyses of various waters, soil, and vegetation downstream of the Pole Canyon ODA, and will be combined with the physical hydrology information in a revised report to provide a comprehensive evaluation for submittal to the agencies in fall 2011.

Flow along the Pole Canyon Creek Diversion occurs only when water is diverted from Pole Canyon Creek, just downstream from the pipeline outlet (LP-PD), for irrigation in the northern end of Sage Valley. Flow in Pole Canyon Creek varies, with more flow during wet years than in dry years. Prior to implementing the Pole Canyon ODA Removal Action (RA) in 2007 and 2008, flow from the watershed upstream of the ODA would move through the base of the ODA overburden, with some infiltration into the underlying alluvium and into the Wells Formation; the remaining flow emerging from the ODA would only flow into north Sage Valley during the spring high-flow period. Since the RA, a larger percentage of flow from the watershed upstream of the ODA flows across north Sage Valley downstream from the pipeline outlet because this flow no longer infiltrates into the alluvium and/or the Wells Formation beneath the ODA. Since the RA was implemented, flows within Pole Canyon Creek across north Sage Valley are more frequent and occur for a longer duration.

Soil and vegetation samples were collected in northern Sage Valley, including areas along the Pole Canyon Creek channel, during 2004 Site Investigation (SI) sampling. Soil and vegetation samples were also collected in these areas during 2010 RI sampling, along with stream sediment samples below the toe of the ODA (i.e., downstream of LP-1). Soil and vegetation samples were also collected in 2010 from the riparian area around station LP-PD. However, samples were not previously collected along the Pole Canyon Creek Diversion across northern Sage Valley. A review of selenium data from these previous sample collection activities shows the following (Figure 1):

- Selenium concentrations for soil and vegetation in northern Sage Valley were highest along the Pole Canyon Creek channel at two of the locations sampled during the SI (prior to implementing the RA); concentrations were lower elsewhere across the valley.
- The highest selenium concentrations for soil and vegetation (10.5 mg/kg and 30 mg/kg, respectively) in northern Sage Valley were measured during the SI in 2004. Selenium concentrations for soil and vegetation samples collected in 2010 during the RI were typically lower or similar to selenium concentrations measured throughout northern Sage Valley during the SI, with the exceptions noted above.

- Based on SI data, which represent conditions when selenium loading (e.g., pounds per day) was significant prior to implementation of the Pole Canyon ODA RA, impacts of Pole Canyon Creek selenium loading to soil and vegetation in northern Sage Valley at that time were minimal except for two locations along the main creek channel. Since implementation of the RA, and based on a general assessment of results from the RI sampling (Figure 1), the decreased selenium loading from the Pole Canyon ODA appears to have resulted in lower concentrations to soil and vegetation.
- The highest selenium concentrations in stream sediment between the Pole Canyon ODA toe seep (LP-1) and Sage Valley are located closest to the seep. Concentrations range from 47.9 mg/Kg near the seep to 9.3 mg/Kg just downstream from LP-PD. Similarly, vegetation located closer to the seep had higher selenium concentrations than vegetation farther from the seep.

#### 1.4 Sampling Plan and Sampling Locations

Soil and vegetation samples will be collected at a total of 18 locations (Figures 1 and 2), each within the flow area inundated during the high-flow period:

- two locations in the LP-1 area,
- five locations in the Pole Canyon Creek Diversion (northern flow area) as it crosses northern Sage Valley plus one transect encompassing five locations across the diversion's overland flow path,
- one location in an unimpacted area to the north of the Pole Canyon Creek Diversion,
- two locations along the North Fork of Sage Creek, and
- three locations in the main Pole Canyon Creek channel area where it crosses northern Sage Valley.

The final locations will be determined in the field based on accessibility and representativeness of soil and vegetation in areas inundated by water diverted from Pole Canyon Creek, just downstream from location LP-PD, during the high-flow period of 2011. The actual sample locations will be recorded during sampling using a GPS.

Soil and vegetation will be sampled at two locations in the LP-1 area to represent soil and vegetation inundated during the high-flow period of 2011. The first sampling location will be immediately downstream from the seep discharge and flow monitoring location (within the first 100 feet downstream from the seep). Sampling at this location will include collection of vegetation samples observed to be yellow stained. The composite samples of yellow-stained

grasses and/or forbs collected at this first location will be split in the field to create two samples from each composite. One sample will be washed by the lab prior to analysis (as for all other vegetation samples) and the other sample will be analyzed without being washed (for this location only); see Section 1.7. The second location will be downstream from the location of yellow staining of vegetation observed in early June 2011 (approximately 100 to 200 feet downstream from the seep). Sampling at this location will include collection of vegetation samples that are not yellow stained.

Along the Pole Canyon Creek Diversion, the first planned location will be 100 to 200 feet downstream from the location where spring 2011 flow was no longer channelized, resulting in overland flow. The second location will be a transect set up across the Pole Canyon Creek Diversion, approximately 1,000 feet downstream from the first location (see Figures 1 and 2). Along the transect, five locations will be sampled across the flow area – one along the channel, and two on both sides of the channel at 50 feet and 100 feet from the channel – to characterize the lateral extent of overland flow width potentially affected by inundation. At each location along the transect, the five subsamples that comprise the composite sample will be collected parallel to the flow direction/channel to, thus, stay within the inundated or uninundated area to be represented by each composite sample (see Section 1.5). The third planned location will be at the approximate mid-point of the diversion as it crosses the valley, and the other three locations will be within the 1,000-foot by 500-foot area at the downstream end of the diversion (Figure 2). Inundation was observed by mine personnel in this area while it occurred in early to mid-June. Accordingly, mine personnel will participate in the sample collection effort and will guide field selection of actual sample locations. The 1,000-foot by 500-foot area will be divided into three approximately equal parts, each representing one sample location (Figures 1 and 2). An additional sample location will be in the unimpacted area to the north of the Pole Canyon Creek Diversion. Prior to sample collection, mine personnel will review the proposed location to ensure that the unimpacted sample location did not receive Pole Canyon Creek water during the spring 2011 high-flow period.

Along the North Fork of Sage Creek, a total of two locations will be sampled in areas potentially affected by the spring 2011 high flows. Locations will be spaced at intervals of approximately 2,000 feet, with the first location 2,000 feet downstream from where the diversion flows into the North Fork of Sage Creek (Figure 1).

Along the Pole Canyon Creek channel, the first planned location will be 350 to 400 feet downstream from lower Pole Canyon Creek transect LPT3 (sampled during RI sampling in 2010) which is also downstream from the point where the diversion leaves the channel. The second planned location will be just to the east of alluvial aquifer monitoring well GW-22. The third planned location will be in the vicinity of SI locations SV-10 and SV-13; where the highest soil and vegetation concentrations were observed previously in this area. Flows within this reach are typically overland and not contained within the channel.

## 1.5 Soil Sampling Equipment and Procedures

Soil sampling procedures specified in the Final RI/FS SAP (Formation, 2010) will be followed during this sampling event. Soil samples will be collected from the 0- to 6-inch depth interval. The methods for sampling are described in detail in JRS SOP No. 27, Soil Sampling for Inorganic Compounds (FSP Attachment).

Each surface soil sampling location will be laid out to represent the portion of the flow area, adjacent to the stream thalweg, potentially affected by the spring 2011 flows. Each sampling location will be no larger than 10,000 ft<sup>2</sup>, and will be subdivided into five subareas of approximately equal area along the longest axis of the area; for sample locations along a stream or diversion channel, the five subareas will be parallel to the flow direction and spaced equally at approximately 20 to 40 feet. One subsample will be collected from the approximate center of each subarea. Equal volumes of subsample from each subarea will be combined to yield one composite surface soil sample to represent the average soil condition within the sampling location.

To create each composite, soil samples will be collected from the sampling location using a clean trowel and then combined and homogenized prior to analysis. The material from the five subsamples will be combined during sampling in a sealable, watertight, plastic bag or plastic bottle. Once all the subsamples have been collected, the sample will be homogenized in the field by manually mixing and massaging the materials within the sealed sample bag or turning and shaking the sample bottle for a minimum of 30 seconds. Any large vegetation debris, such as sticks or leaves, and gravel or cobbles may be removed using the sampling scoop or trowel. Once the sample has been composited, it will be immediately labeled, double-bagged, and stored in a covered container for shipment to the laboratory. Field duplicates will be collected from the mixed composite, as required by the RI/FS QAPP (Formation, 2010).

General soil descriptions will be recorded for the surface soils in each sampling location. Description of the soil texture and color, and presence of litter, roots, and rocks, will be recorded at the time of sampling.

## 1.6 Vegetation Sampling Equipment and Procedures

Vegetation sampling procedures specified in the Final RI/FS SAP (Formation, 2010), including JRS SOP No. 28, Terrestrial Vegetation Sampling (FSP Attachment), will be followed, with the exception that the composition of the vegetation community will not be determined because this information is not needed to fulfill the sampling objective. One mixed-species composite sample of grasses and one mixed-species composite sample of forbs will be collected from each sampling location; general composite samples in which grass and forb species are combined in the same sample will not be collected. If woody species are present and dominant at a sampling location, then a woody species composite sample will be collected as well.



All of the species (and relative percentages) included in each composite sample will be documented. Each composite sample will be comprised of at least five subsamples. Above-ground vegetation will be collected using clean scissors or shears. Vegetation will be clipped to approximately one inch above of the soil surface for grasses and forbs and the current year's growth only will be clipped for woody species. The collected samples will be kept cool until they can be further processed by the laboratory prior to analysis.

### **1.7 Soil and Vegetation Analyses**

The composite soil samples will be analyzed for selenium in accordance with the laboratory procedures and methods identified in SAP Table 3-7 (Formation, 2010) and the Quality Assurance Project Plan (QAPP).

All vegetation samples will be submitted to the laboratory as unwashed, with instructions to the laboratory to wash samples prior to analysis. These samples will be weighed, rinsed three times with deionized water, and then dried for at least 24 hours at 60°C and re-weighed to determine percent moisture. The composite samples of yellow-stained grasses and/or forbs collected in the area just downstream from the ODA toe seep will be split in the field and one of each of the split samples will be analyzed without being washed. These unwashed splits will be weighed and then dried for at least 24 hours at 60°C and re-weighed to determine percent moisture. All dried samples will be submitted for chemical analysis of selenium in accordance with the laboratory procedures and methods identified in SAP Table 3-9 (Formation, 2010) and the QAPP.

### **1.8 Sample Designations and Sample Handling**

Sample identification and handling will follow procedures specified in Section 3 of the RI/FS SAP (Formation, 2010).

## **2.0 ADDITIONAL SEDIMENT SAMPLING IN LOWER POLE CANYON BELOW THE POLE CANYON ODA TOE**

### **2.1 Overview**

Sediment sampling is planned for summer 2011 to provide additional selenium concentration data to further characterize the extent of overburden deposition to lower Pole Canyon Creek and adjacent overbank areas where sediments may have been deposited by historical mass movement off of the ODA (i.e., downgradient from the ODA toe area). Samples will be collected once during the summer season, as soon as practical after approval of this plan. Proposed sampling locations are shown on Figure 3.

### **2.2 Sampling Objective**

The objective for collecting additional sediment/soil samples within and adjacent to lower Pole Canyon Creek is to characterize the vertical, lateral, and downstream extent of COPC transport from the Pole Canyon ODA to Pole Canyon Creek sediments, including sediments deposited in overbank areas. Results from analyses of the additional sediment samples will supplement data from sediment samples collected as part of the RI in 2010. Selenium concentrations for sediment samples collected along lower Pole Canyon Creek will be compared with the area-wide background concentration of 2.4 mg/Kg to identify the extent of transport from the Pole Canyon ODA to sediments within and along the lower Pole Canyon Creek area. Additional sampling may be needed if the 2010 and 2011 data do not adequately address this objective.

### **2.3 Background Information**

In 2010, three transects, each located perpendicular to the channel flow line, were sampled downstream from the ODA toe (see Figure 3, modified from Figure 4-25 of the draft 2010 Data Summary Report [DSR]). Nine sediment samples were collected (three locations on each transect line), and each sample was collected from a depth of 0 to 4 inches. At eight of the nine sample locations, the concentrations of selenium in sediments were elevated relative to the background screening-level benchmark for sediment (2.4 mg/Kg).

Along the Pole Canyon Creek channel, selenium concentrations decreased with distance downstream from a high of 47.9 mg/Kg at the upstream transect to a low of 9.3 mg/Kg at the farthest downstream transect (Figure 3). All of the channel sediment samples had selenium concentrations above the background level. The lowest selenium concentrations (2.5 and 0.48 mg/Kg) in overbank samples were also observed in the farthest downstream transect (overbank locations LPT3-1 and LPT3-3). These concentrations are at or below the background level and indicate the approximate downstream extent of elevated selenium concentrations in sediments deposited to overbank areas. Therefore, additional downstream sampling of overbank areas is

not needed, although additional sampling of the channel sediments is warranted to characterize the downstream extent of elevated COPC concentrations within the stream channel.

## **2.4 Sampling and Analysis Plan**

Sediment sample collection in the lower Pole Canyon area will follow the previously approved protocols provided in the Final RI/FS Sampling and Analysis Plan (SAP) (Formation, 2010), including the Quality Assurance Project Plan (QAPP) along with Field Sampling Plan (FSP) Sections 3.4.2.3 (Equipment and Procedures), 3.4.4 (Sediment Sample Design), and 3.4.5 (Sampling Handling and Analysis). Samples will be collected, as composites, in accordance with SOP No. 14 (Sediment Sampling for Chemical Analysis) and samples representing the 6- to 12-inch depth will be obtained by scraping the side of the hand-dug 12-inch-deep excavation to obtain a depth-integrated sample.

At each of the nine previously sampled transect locations, sediment samples will be collected at a depth of 6 to 12 inches. This will provide additional at-depth information for assessment of the vertical extent of COPC transport in this area.

Additional overbank locations along each of the previously sampled transect lines will also be sampled to further characterize the lateral extent of elevated COPC concentrations in sediment/soil adjacent to the lower Pole Canyon Creek channel. A total of five additional locations will be sampled, one on transect line LPT1 and two each on transect lines LPT2 and LPT3 (Figure 3). As possible given the local topography (e.g., up to the toe of the adjacent hillside to the north), the new samples will be collected at a distance of 50 to 150 feet out (away from the creek channel) from the previous overbank sample locations. Note that only one additional location on transect line LPT1 (to the south, away from the hillside) will be sampled because the previous sampling location on the north side of the channel (LPT1-3) was adjacent to the hillslope toe. Two samples will be collected at each new sampling location, from depths of 0 to 4 inches and also 6 to 12 inches.

Also, to further characterize the downstream extent of COPC transport to sediments in the Pole Canyon Creek channel, two additional channel locations will be sampled; the new sample locations will be approximately 250 and 500 feet downstream from transect location LPT3 (Figure 3). Two samples will be collected at each new sampling location, from depths of 0 to 4 inches and also 6 to 12 inches.

The actual sample locations will be recorded during sampling using a GPS. According to sample analysis protocols in the Final RI/FS SAP (Formation, 2010), the samples will be sieved to less than 2 mm and then analyzed for selenium as specified in SAP Table 3-7.

### **3.0 ADDITIONAL SEDIMENT SAMPLING IN SWALE DOWNGRADIENT FROM DETENTION BASIN DP-7**

#### **3.1 Overview**

Sediment sampling is planned for summer 2011 to provide additional selenium concentration data in the drainage swale downgradient from the pipe outlet discharging from detention basin DP-7. Samples will be collected once during the summer season, as soon as practical after approval of this proposed plan. Proposed sampling locations are shown on Figure 4.

#### **3.2 Sampling Objective**

The objective for collecting additional sediment/soil samples from the drainage swale downgradient from basin DP-7 is to describe the extent of COPC transport to drainage swale sediments downgradient from basin DP-7. Results from analyses of the additional sediment samples will supplement data from sediment samples collected below basin DP-7 as part of the RI in 2010. The selenium concentrations for these new sample locations will be compared with the area-wide background concentration of 2.4 mg/Kg to identify the extent of transport from DP-7 to sediments/soils in the drainage swale below the basin. Additional sampling may be needed if the 2010 and 2011 data do not adequately address this objective.

#### **3.3 Background Information**

In 2010, sediment samples were collected in the swale at distances of 50, 75, and 100 feet downgradient from the basin pipe outlet and at a depth of 0 to 4 inches. The selenium concentrations in these sediments were 662, 2,040, and 1,170 mg/Kg, respectively (Figure 4). As noted in the 2010 DSR, selenium concentrations in swale sediments were higher than those measured in basin DP-7 sediments (546 mg/Kg), likely resulting from spatial variability in the basin sediments as well as the high concentration of total selenium (1.6 mg/L) in DP-7 water discharging from the basin. The selenium concentrations in these DP-7 swale sediments are significantly elevated relative to other storm water detention basin sediments, and remain high in the sample located farthest downgradient (100 feet from the basin pipe outlet). Therefore, additional data are needed to describe the extent of COPC transport to drainage swale sediments downgradient from basin DP-7.

#### **3.4 Sampling and Analysis Plan**

Sediment sample collection in the swale downgradient from basin DP-7 will follow the previously approved protocols provided in the Final RI/FS Sampling and Analysis Plan (SAP) (Formation, 2010), including the Quality Assurance Project Plan (QAPP) along with Field Sampling Plan (FSP) Sections 3.4.2.3 (Equipment and Procedures), 3.4.4 (Sediment Sample Design), and 3.4.5 (Sampling Handling and Analysis). Samples will be collected, as composites, in

accordance with SOP No. 14 (Sediment Sampling for Chemical Analysis) and samples representing the 6- to 12-inch depth will be obtained by scraping the side of the hand-dug 12-inch-deep excavation to obtain a depth-integrated sample.

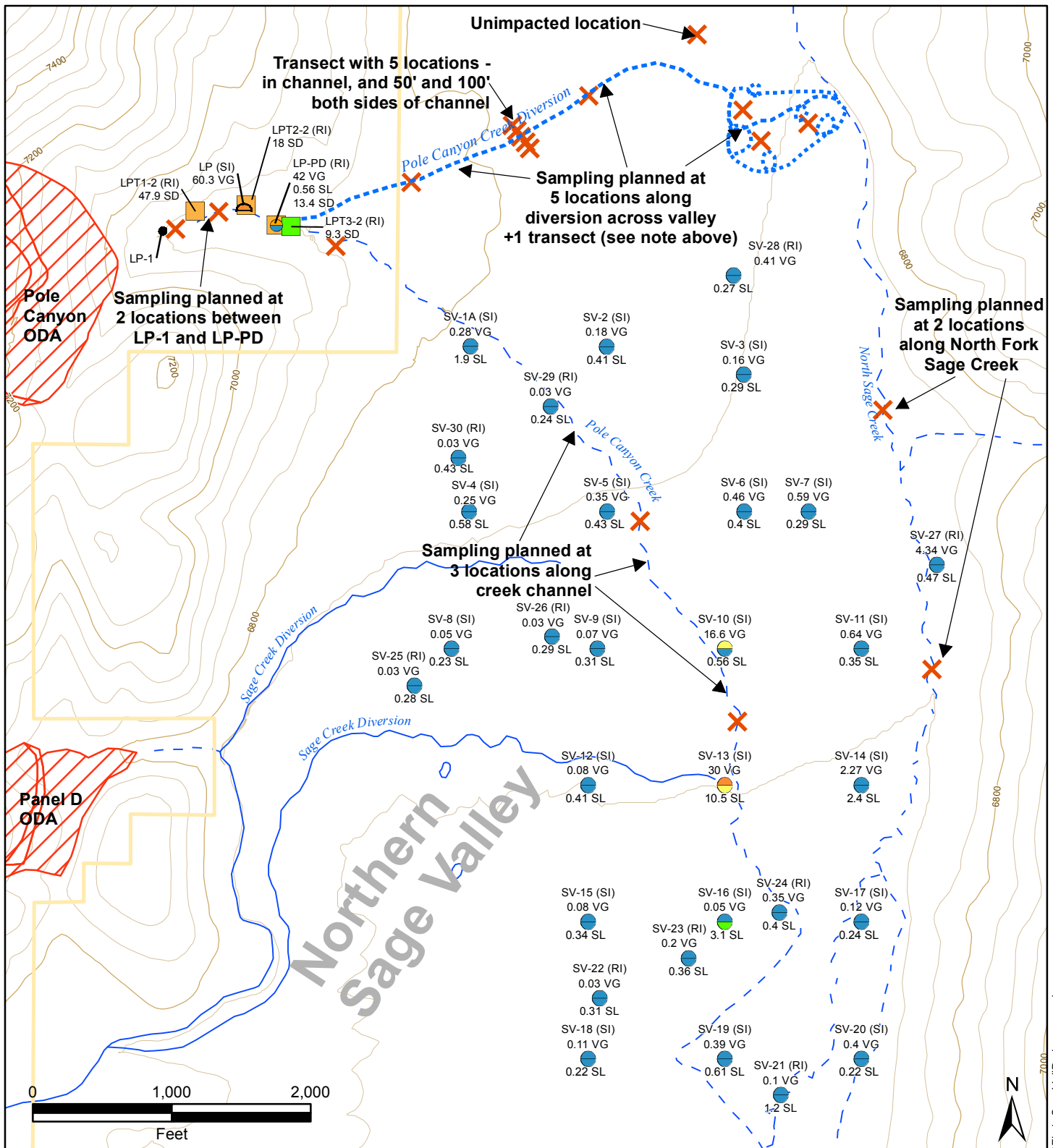
At each of the three previously sampled locations, samples will be collected at a depth of 6 to 12 inches (Figure 4). Also, to further characterize the downstream extent of selenium concentrations in swale sediments, five additional locations will be sampled at distances of 200, 300, 400, 500, and 600 feet downgradient from the basin pipe outlet (Figure 4). Two samples will be collected at each new sampling location, from depths of 0 to 4 inches and also 6 to 12 inches.

The actual sample locations will be recorded during sampling using a GPS. According to sample analysis protocols in the Final RI/FS SAP (Formation, 2010), the samples will be sieved to less than 2 mm and then analyzed for selenium as specified in SAP Table 3-7.

#### **4.0 REFERENCES**

Formation Environmental, 2010. Final RI/FS Sampling and Analysis Plan (SAP), including Quality Assurance Project Plan (QAPP), Field Sampling Plan (FSP), and Health and Safety Plan (HASP), prepared for J.R. Simplot Company, June. Incorporates SAP Addendum 01, May 2011.

## FIGURES



## Legend

### Selenium Concentration in Vegetation

- < 5 mg/kg
- 5 - 10 mg/kg
- 10 - 20 mg/kg
- 20 - 100 mg/kg
- > 100 mg/kg

**Abbreviations:**  
 VG = Vegetation  
 SL = Soil  
 SD = Sediment

### Selenium Concentration in Soil

- < 3 mg/kg
- 3 - 8 mg/kg
- 8 - 13 mg/kg
- 13 - 20 mg/kg
- > 20 mg/kg

SI = Site Investigation (2004)  
 RI = Remedial Investigation (2010)

### Selenium Concentration in Stream Sediment

- < 1 mg/kg
- 1 - 10 mg/kg
- 10 - 100 mg/kg
- > 100 mg/kg

✕ Planned Sample Location

**J.R. SIMPLOT COMPANY**  
 SMOKY CANYON MINE RI/FS  
 SAMPLING AND ANALYSIS PLAN - ADDENDUM 02

**FIGURE 1**  
**SOIL AND VEGETATION**  
**SELENIUM CONCENTRATIONS AND**  
**PLANNED SAMPLING LOCATIONS**  
**IN LOWER POLE CANYON CREEK AND**  
**NORTHERN SAGE VALLEY**

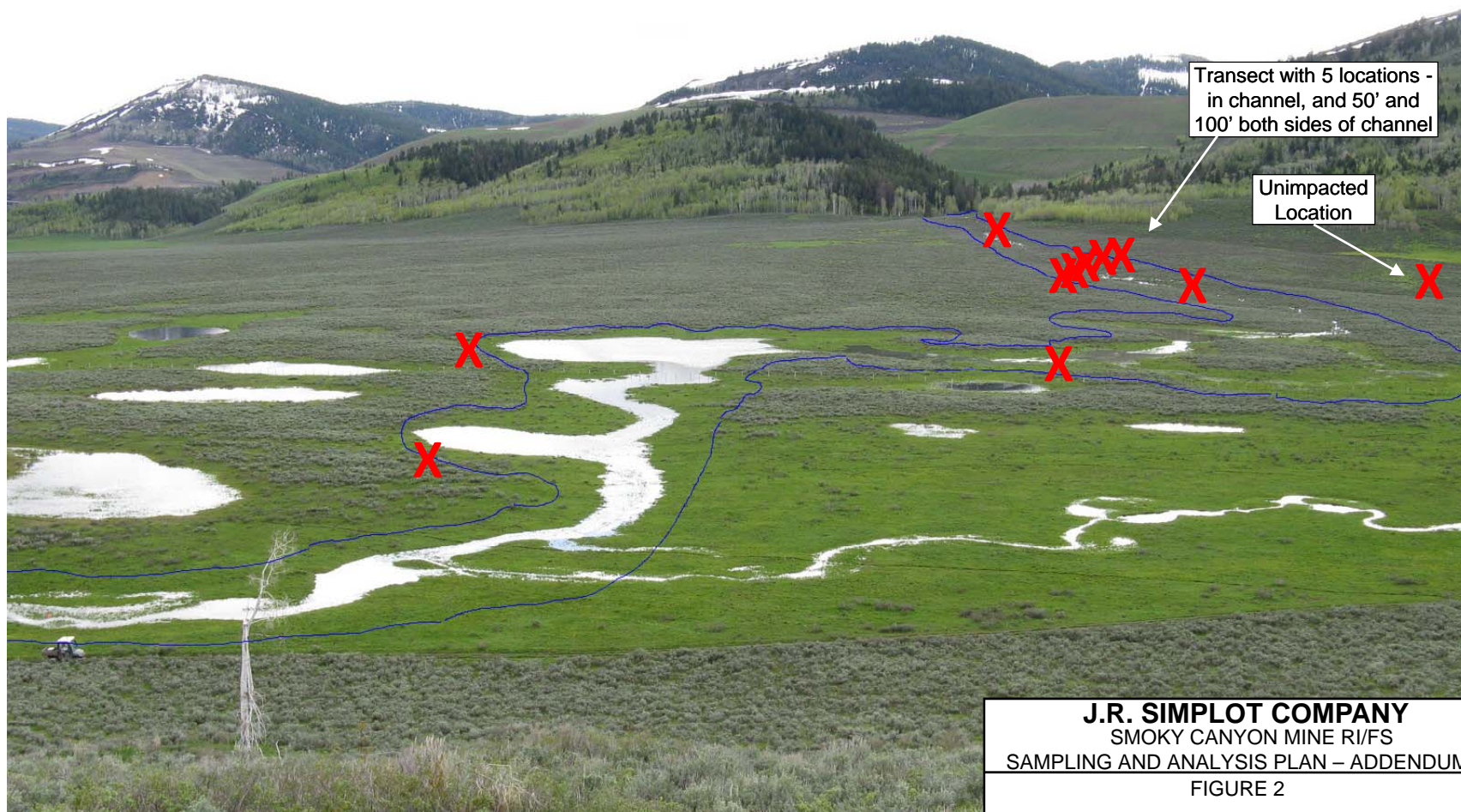
DATE: AUG. 02, 2011

BY: CRL

FOR: FLC

**FORMATION**  
**ENVIRONMENTAL**





## Legend

- X** Planned Sample Location
- Approximate Boundary of Pole Canyon Creek Diversion Inundation Area, early to mid-June 2011

Note: Photograph taken 06/07/2011.

**J.R. SIMPLOT COMPANY**  
SMOKY CANYON MINE RI/FS  
SAMPLING AND ANALYSIS PLAN – ADDENDUM 02

FIGURE 2

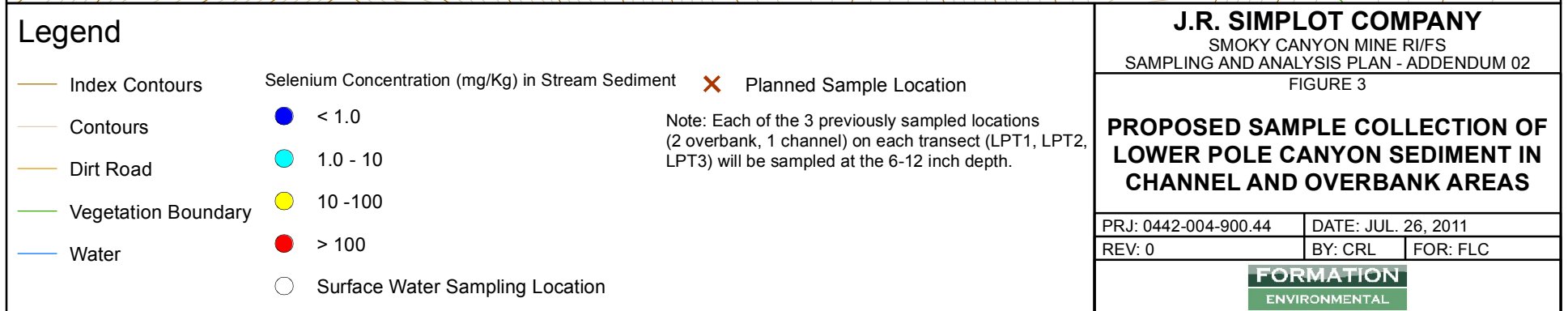
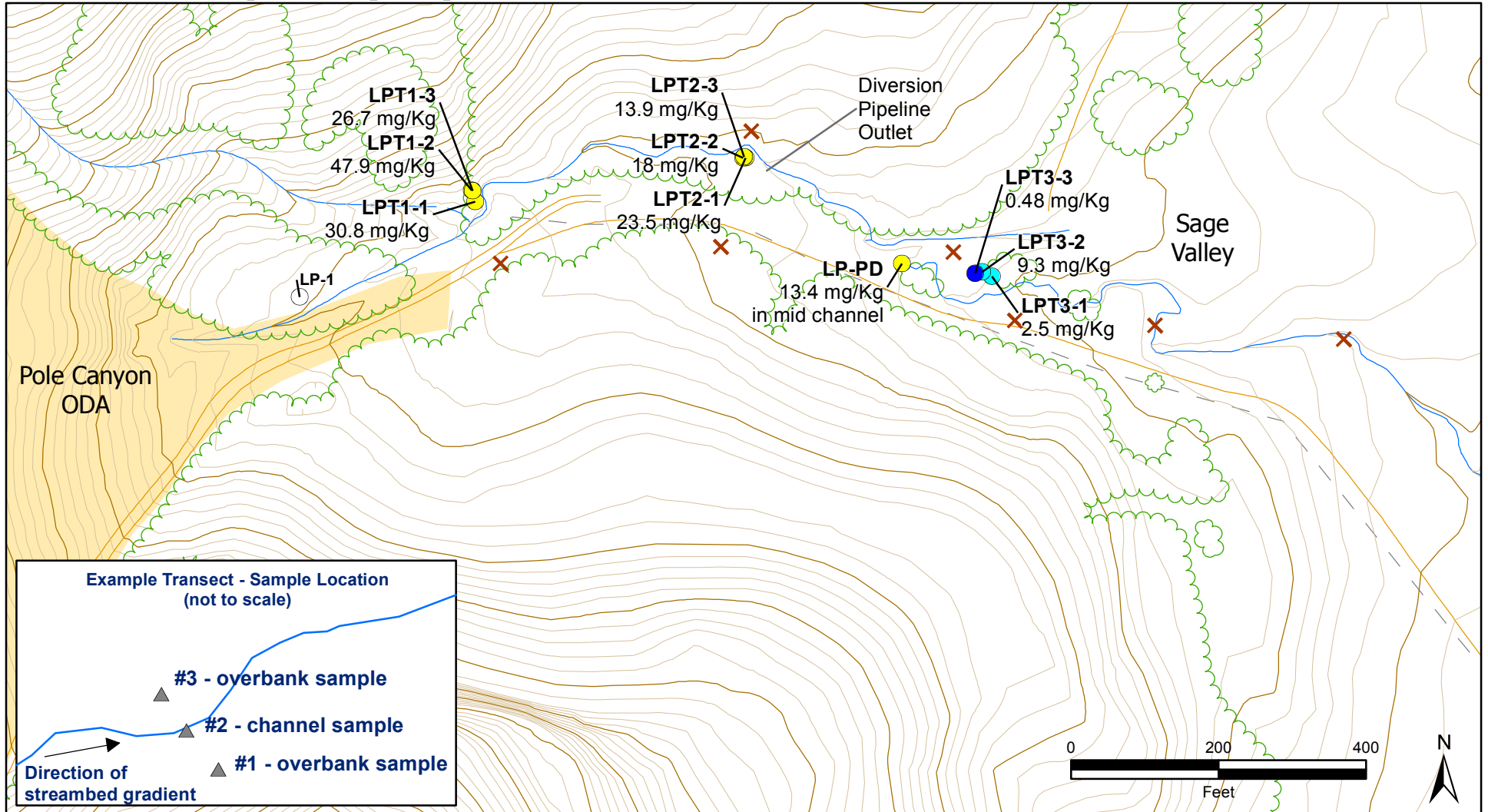
## SAMPLING LOCATIONS ALONG POLE CANYON CREEK DIVERSION

DATE: AUG. 2, 2011

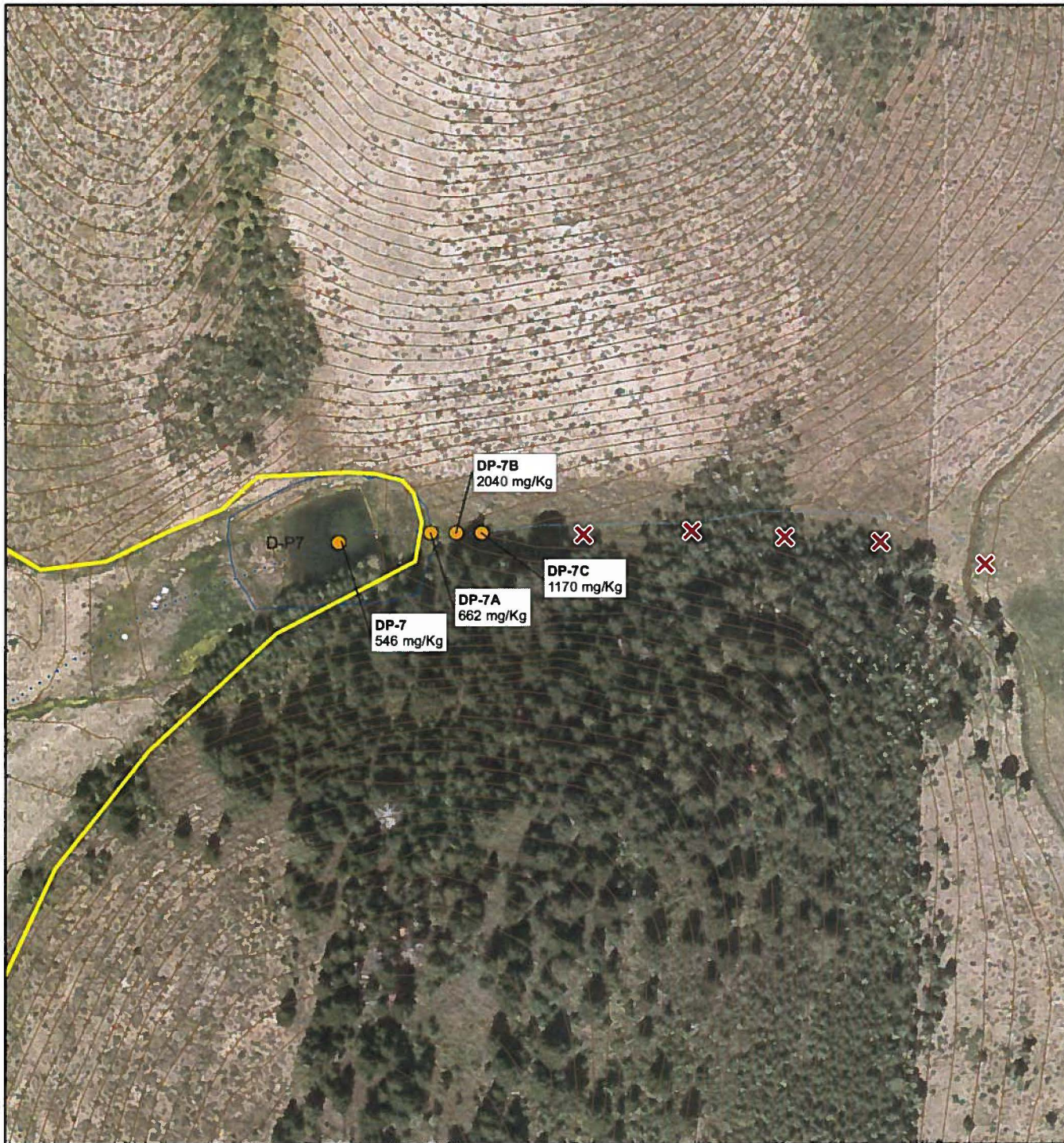
BY: BAH

FOR: FLC

**FORMATION**  
ENVIRONMENTAL

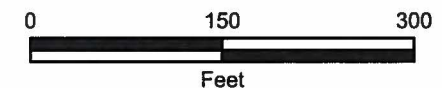






## Legend

- X Planned Sample Location
- Existing Sediment Sample Location  
(with 2010 RI Selenium Concentration)
- 5 ft contour
- Storm water basin



**J.R. SIMPLOT COMPANY**  
 SMOKY CANYON MINE RI/FS  
 SAMPLING AND ANALYSIS PLAN - ADDENDUM 02  
 FIGURE 4

## PROPOSED SAMPLE COLLECTION IN SWALE DOWNGRADIENT FROM DETENTION BASIN DP-7

DATE: JUL, 29, 2011

BY: CRL

FOR: FLC

**FORMATION**  
 ENVIRONMENTAL